

SUPPLEMENTAL SUN SALON MANAGEMENT SYSTEM

By

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Abstract

The *Supplemental Sun Salon Management System* is a fully functional salon management application designed to provide a centralized computer station the ability to control the standard tanning salon processes from a single graphical user interface. This project is fully designed and customized for use at a new tanning salon business called Supplemental Sun. The functionality incorporated in the SSSMS program provides a user with all the tools necessary to manage sales, profile customers, schedule appointments and control tanning sessions.

The *Supplemental Sun Salon Management System* is equipped with state of the art management functionality built with the latest Microsoft software consisting of VB.NET and Access XP. The hardware utilized for this system is the latest in salon timing systems, printers and cash drawers. The T-Max timing system is fully controlled via the SSSMS application which provides a single employee the ability to operate nearly all tanning bed tasks easily and efficiently. This provides a substantial decrease in employees needed to operate Supplemental Sun which will result in greater profits and an excellent salon atmosphere.

SUPPLEMENTAL SUN SALON MANAGEMENT SYSTEM

1. Statement of the Problem

Looking good and staying in shape is a top priority for many people today, and the health and fitness industry is a stable and growing part of America's economy.

Americans often associate appearing healthy with having a tan. There are an estimated 45,000 tanning facilities in the United States (2, Levy, 1999). The indoor tanning industry is continuing to grow in a professional and profitable direction (3, Mattoon, 2002). An estimated \$3.6 billion will be sold in tanning sessions and another \$1 billion in tanning related products this year (2, Levy, 1999)

With the continuing financial success of the tanning industry there is constant need for modernization. A reported 77 percent of tanning salons are making plans for expansion within the next year. One of the most noticeable progressions in tanning salons nationwide has been the increase in computerization. More than 83 percent of salons have some type of a software management system in place (3, Mattoon, 2002). Software management is essential in today's tanning salons. It creates a simpler work environment, produces more time for maintenance and cleaning and makes scheduling an elementary task with less human error.

My brother is currently opening a tanning salon. This tanning salon, called **Supplemental Sun**, will be created from the ground up. This requires all new equipment and supplies including:

- 10 SunVision Pro 28LE tanning beds.
- 1 Pentium 4 2.40 GHz Computer with RS232 port.
- 1 CRT monitor (17 inch).
- 1 T-Max Manager Pro tanning bed timer unit.
- 10 T-Max 3A/F units.
- 1 M-S Cash Drawer
- HP DeskJet Printer.

2. Description of the solution.

To control and monitor the tanning processes there must be a software management system in place. A tanning salon with one computer and ten tanning beds requires only one employee working at any given time. This employee must be able to complete all the necessary daily tasks in order to effectively operate such a tanning salon. Ideally, an employee positioned at a central computer located at the front desk would have the ability to operate the entire salon. This would require a software management system capable of assisting in a wide variety of tasks. I thoroughly discussed with my brother the functions necessary as well as some additional features desired in such a software management system. The required functions and features are as follows:

- Entering customer information
- Selling packages and tracking their use
- Taking and tracking appointments
- Printing professional receipts
- Controlling the cash register
- Monitoring the beds and tanning activity.

The features listed above are integrated in a single software package.

3. Project Objective (Deliverables)

To design, create and implement a versatile, user friendly and relatively cost effective graphical user interface for the day-to-day operation of a tanning salon. This system interacts with a cash drawer, printer, database and a T-Max control/timing system.

This program is titled the **Supplemental Sun Salon Management System** or **SSSMS** for short. It enables a single employee positioned at the front desk to actively control and monitor a salon's operation from a central computer.

This program is designed for use on the Microsoft NT/2000 Pro/XP operating systems. The **SSSMS** is a Windows GUI with mouse point-and-click functionality. It communicates with a T-Max Manager/Pro front desk control unit by utilizing an available RS232 serial port. The T-Max Manager/Pro is the most reliable salon timing utility on the market today. The T-Max Manager/Pro is connected (daisy chained) to ten T-Max 3A units (one for each tanning bed) using RJ22 cables (1, Applied Digital Inc.).

This system is designed to enable the user to:

- Enter and store customer data
- Control and monitor tanning sessions
- Schedule appointments
- Sell tanning packages
- Control the cash drawer
- Print sales receipts.

The features described are common among top software packages. I have kept the price of this program to a minimum. The end cost is significantly lower than any comparable software packages on the market today.

4. Design and Development

4.1 Software

The SSSMS was developed using several Microsoft products currently available in the University of Cincinnati CAS library, IET lab or for purchase in the OCAS bookstore.

Because of its capabilities, flexibility and availability, Microsoft Visual Basic.Net was used to create the graphical user interface. This GUI was designed using a series of Windows application forms. An executable was designed and created to communicate with several tables created with Microsoft Access XP using ADO.Net. An Access XP database is used to store appointments, merchandise and customer data in related tables.

4.2 Hardware

A T-Max Manager/Pro is utilized to monitor the status of each T-Max 3A Timer (See Figure 1). The communication between the T-Max Manager and the computer is accomplished via a RS232 port to the computer where it is monitored and displayed on various user forms using both numerical and graphical objects.



Figure 1. T-Max Products

A parallel cash drawer is connected through another parallel port. The GUI triggers an ASCII code to the parallel port causing the cash drawer to open when

appropriate. Upon transaction completion, user information, transaction date and time and expenses is sent to a text file and saved as a log and a copy of this data is sent to the parallel printer as a sales receipt.

4.3 Budget

The expense for tools, equipment and materials necessary to complete this project are shown below (See Figure 2).

Product	Price
ECD 232 Cash Drawer	\$220.00
Microsoft Visual Studio.Net Professional	\$1,079.00
Microsoft Office XP	\$579.00
HP DeskJet Printer	\$99.99
T-Max Manager Pro	\$599.00
T-Max 3A Timer	\$99.00

Figure 2. Product Expense Table

All funding for this project was supplied by Supplemental Sun's owner. Figure 2. displays a hypothetical retail price list. True cost was considerably less because both Microsoft development products are available for educational use at the University of Cincinnati College of Applied Science library.

4.4 Timeline

Figure 3. displays the **Supplemental Sun Salon Management System** development timeline (See Figure 3).

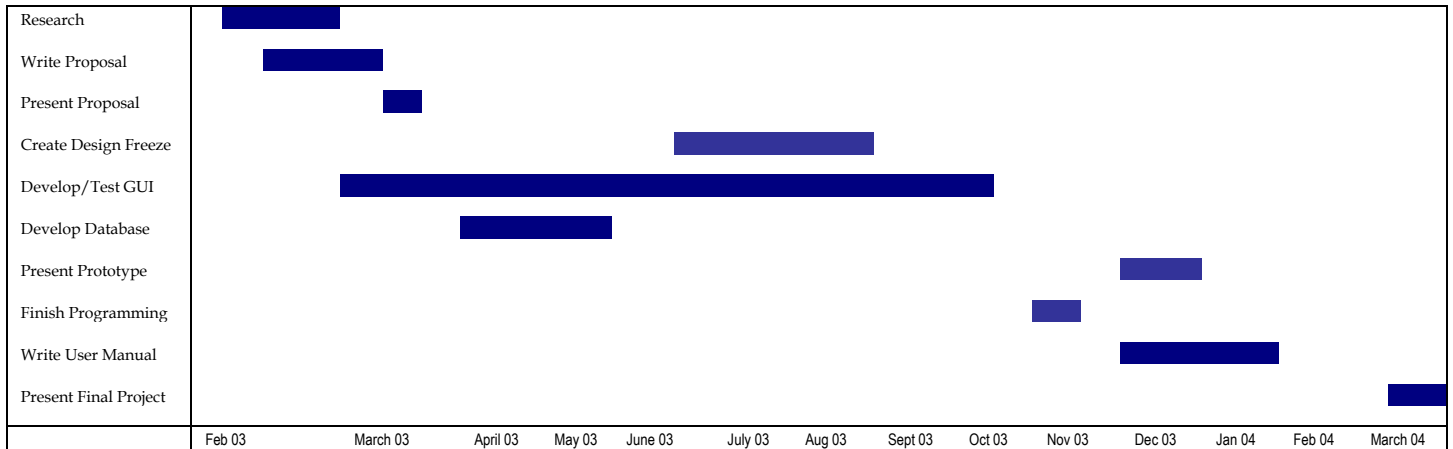


Figure 3. SSSMS Project Development Timeline

The **SSSMS** was fully completed and ready for implementation on March 21, 2004, the end of the winter quarter.

5. Proof of design

The **SSSMS** was designed and completed with very little variation from the original layout. This section provides a look at the Supplemental Sun Salon Management System in its completed state. There were a few challenges that were resolved during the process of completion. Those challenges are discussed in this section.

5.1 Main Menu Screen

The introduction screen is a simple display hosting a SSSMS logo and a group of navigation buttons (See Figure 4).

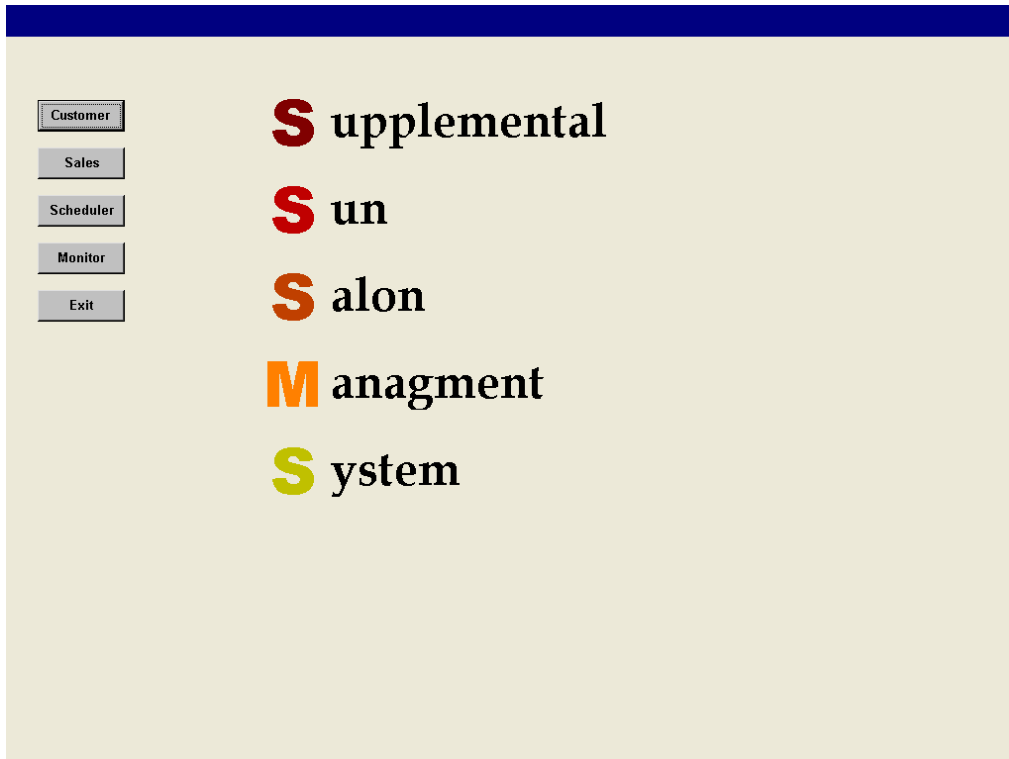


Figure 4. Main Menu

The menu screen allows users to navigate to any other screen as well as exit the application. This is the only screen that allows the user to exit.

5.2 Customer Screen

The Customer Screen provides the user with the ability to easily look-up any customer using several methods. This screen is the most important screen in order to choose, create a new or delete customers from the database. When adding or editing a customer to the SSSMS database you will see the standard customer profile windows (See Figure 6). Selecting a customer is necessary for scheduling and selling

merchandise as well as tanning sessions. The Customer Screen consists of the standard navigation buttons found at the top of nearly all SSSMS screens (See Figure 5). This screen displays a list of all customers. It features the ability to look-up a customer easily as well as create new profiles and delete unused customer profiles.

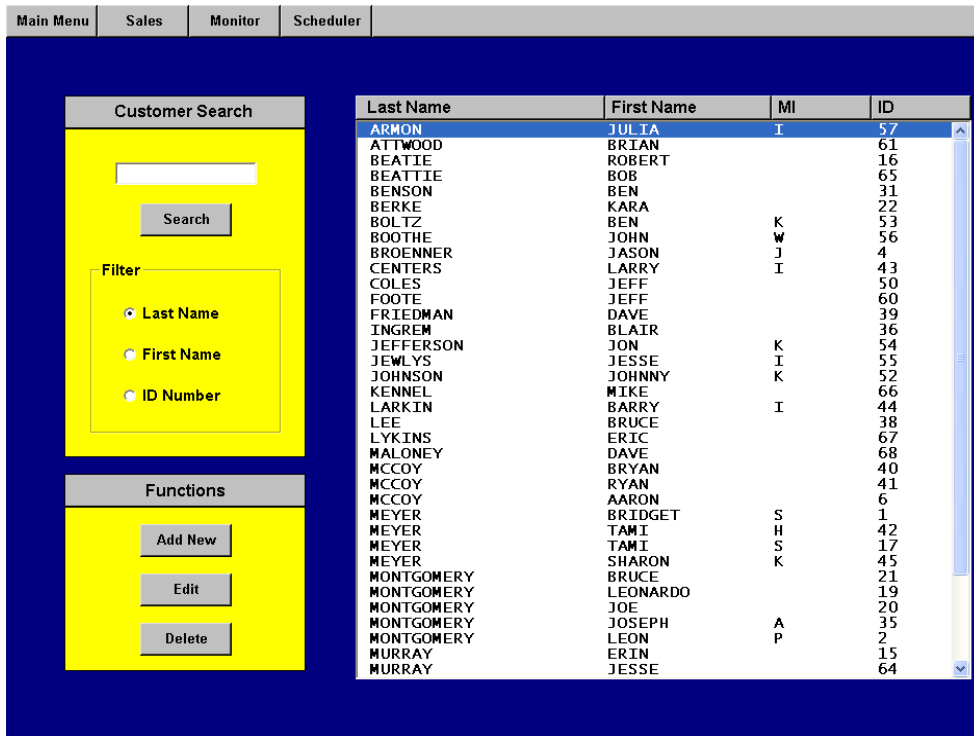


Figure 5. Customer Screen

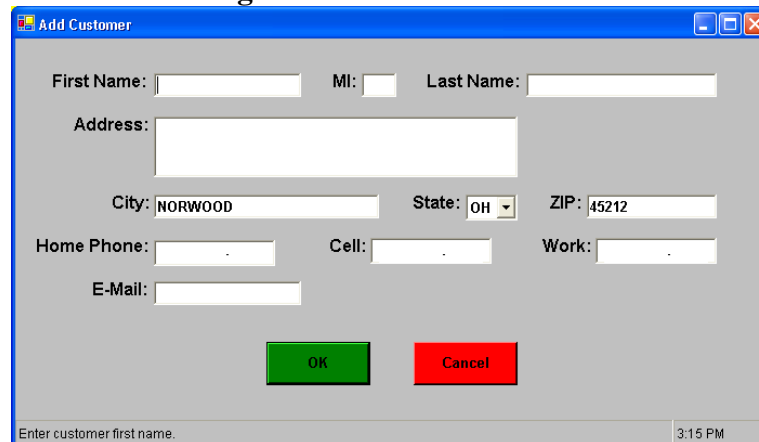


Figure 6. Customer Profile Window

5.3 Sales Screen

The sales screen provides the interface for cash sales and selecting items for purchase. It also includes the ability to select from a variety of tanning sessions and packages. This screen is also equipped with the standard navigation bar (See Figure 7).

The screenshot shows a software interface for a sales screen. At the top, there is a navigation bar with three tabs: "Main Menu", "Customer", and "Scheduler". The main area is divided into four sections:

- Customer:** Displays "Customer ID: 6", "Customer Name: ROBERT BEATIE", and buttons for "Clear" and "Add".
- Merchandise:** Contains a table with columns "Item" and "Number".

Item	Number
BANANA JOE TANNING LOTIO	1111
NO-ADD SUN BLOCK SPF 15	2221
NO-ADD SUN BLOCK SPF 30	2222

Below the table is a "Price: \$3.00" field and a "Select" button.
- Tanning:** Features a "None" checkbox, a "Type" section with radio buttons for "Single Session" (selected) and "Package", and a "Horizontal" dropdown menu. An "Options" dropdown menu and a "Price: \$5.95" field are also present, along with a "Select" button.
- Purchase:** Contains a table with columns "Item" and "Number".

Item	Number
NO-ADD SUN BLOCK SPF 15	2221
NO-ADD SUN BLOCK SPF 30	2222

Below the table is a search field containing "NO-ADD SUN BLOCK SPF 30 2222", a "Remove Item" checkbox, a "Select" button, a "Total: \$5.50" field, and a "Check Out" button.

Figure 7. Sales Screen

The sales screen will display a shopping cart window containing all items to be purchased. This window will be used to tender cash purchases (See Figure 8). This process will force the register to auto-open upon completion of purchase.

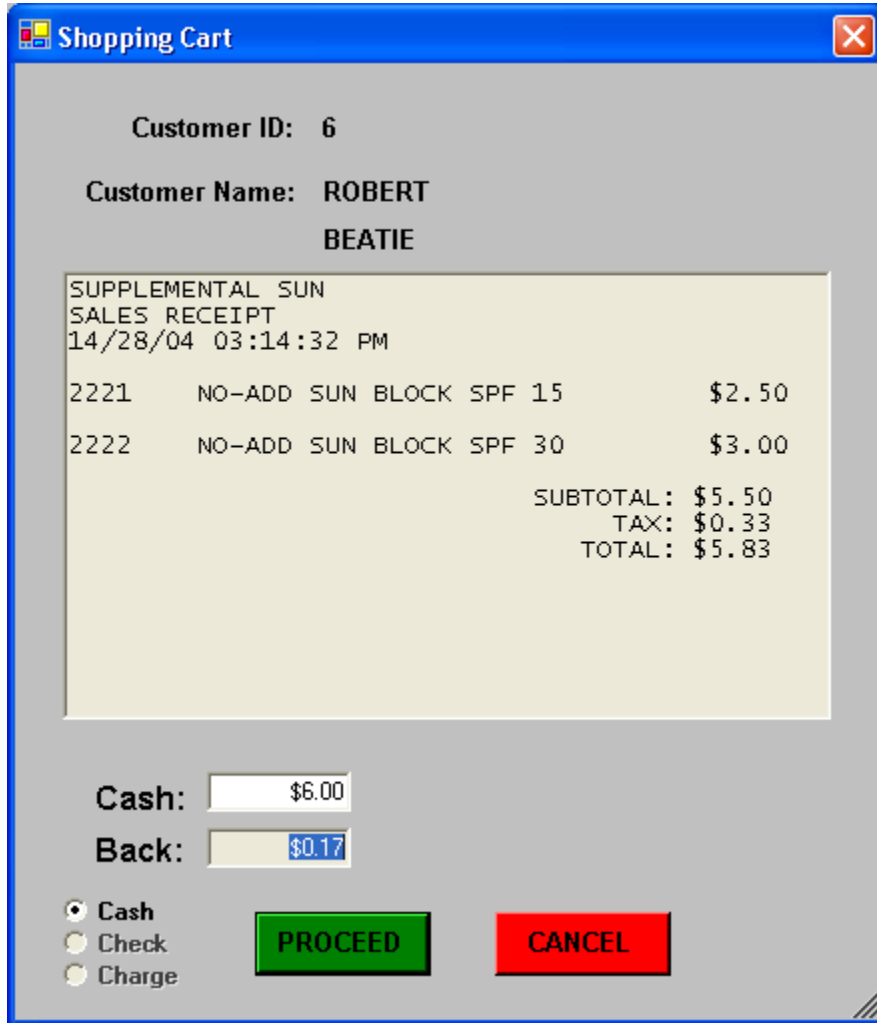


Figure 8. Shopping Cart Window

5.4 Schedule Screen

The Schedule Screen provides an interface for scheduling appointments for tanning sessions. This interface requires the user to select a customer from the customer screen in order to schedule a tanning session. This screen enables the user to easily lookup a tanning session as well as simply schedule an appointment in an available time slot. This screen is also equipped with the standard navigation bar located at the top of the page (See Figure 9).

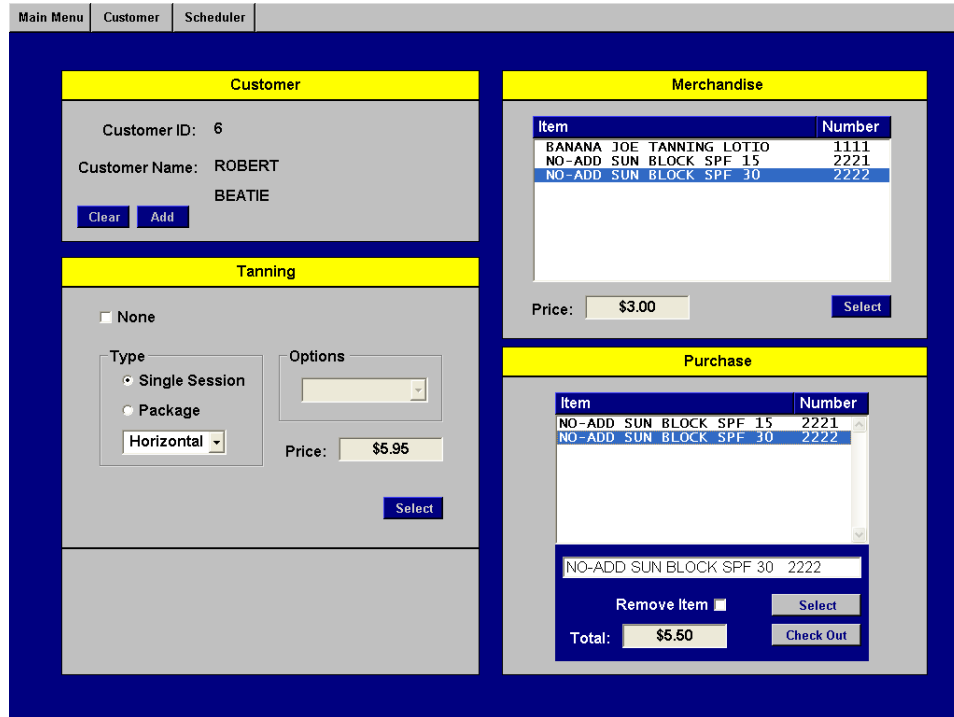


Figure 9. Schedule Screen

5.5 Monitor Screen

The Monitor Screen provides the user with direct interaction with the T-Max Manager. It is activated from the main menu by clicking the 'Monitor' button. Once activated it will be minimized into a 'Show' button located at the upper right hand corner of every other screen for easy access. Clicking the 'Show' button will display the entire contents of this screen. The monitor utility can be used independently of the rest of the salon management system if so desired. This screen provides a visual interface that displays the timing of each bed. It also provides the ability to set the time desired and start and stop tanning sessions. This screen is also equipped with the standard navigation bar located at the top of the page (See Figure 10).



Figure 10. Monitor Screen

6. Conclusions and Recommendations

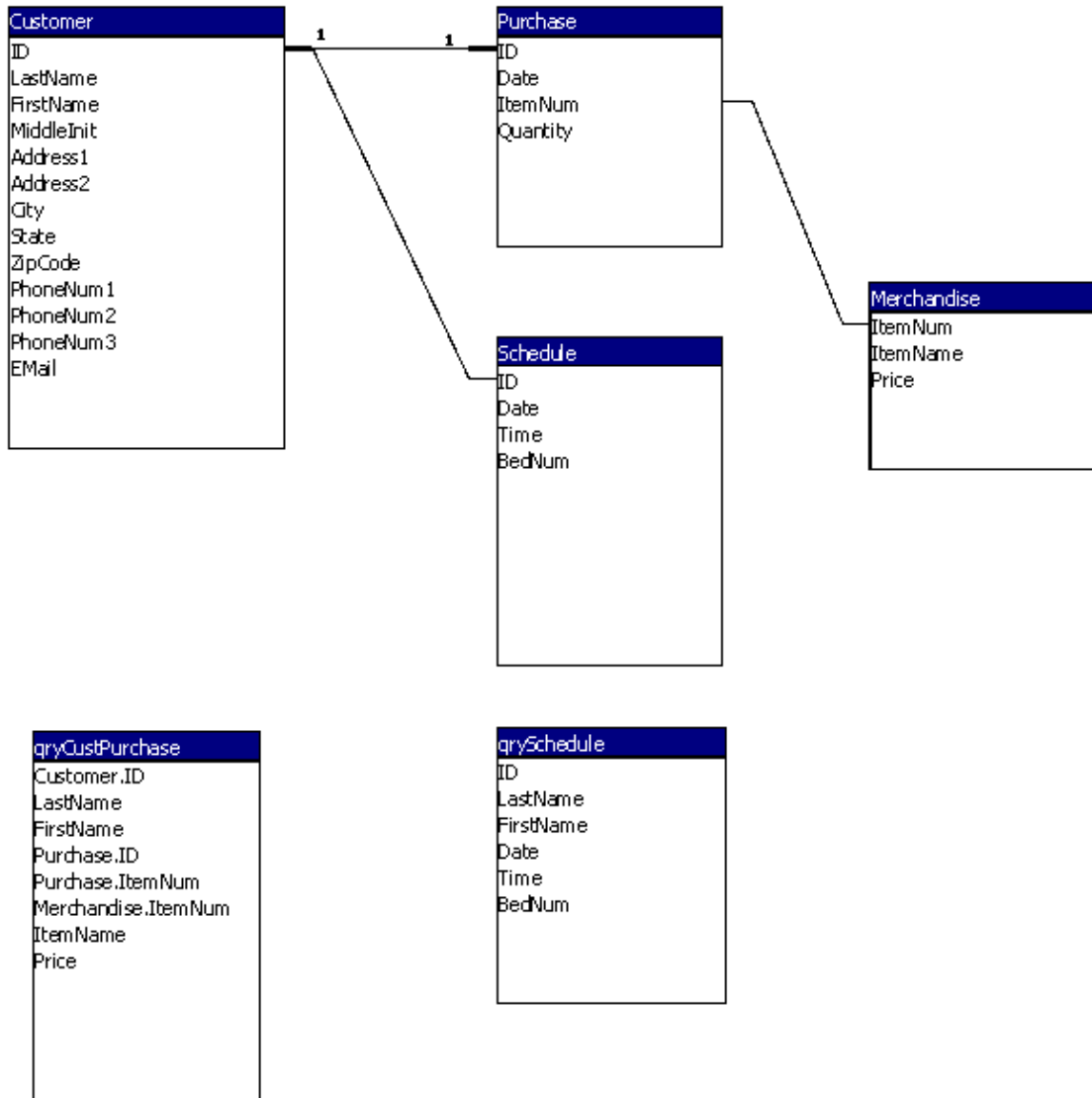
This project was created to serve as the central administrative application for the tanning salon called Supplemental Sun. It was designed and created to provide as simple environment for sales processing, customer maintenance, scheduling and tanning bed control. The innovation of this project is the communication between VB.NET and Access XP, M-S Cash Drawer and the T-Max Timer. Setting up communication with the database is very typical and is easily accomplished. The difficulties in this project arise when creating a communication link with the M-S Cash Drawer and the T-Max Timer. Fortunately, the cash drawer customer support was very helpful and was able to guide me in creating this communication via LPT port.

The manufacturer of the T-Max Manager and T-Max timing unit, Applied Digital Inc, was extremely supportive of their product (1, Applied Digital Inc.). I communicated and received great product support via email. They also supplied me with the device protocols for serial communication. This was essential for the development of the serial communication component of my project.

I recommend thoroughly investigating and researching the devices you are expecting to use. Some manufacturers will fully support their product and provide you will wonderful assistance. Some will even provide you with the protocols necessary to easily communicate with their piece of equipment.

Appendix A

Microsoft Access XP Database Structure



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